CONTENTS OF VOLUME 373

April 1986

HORIUTI K. Some properties of the contractile system and sarcoplasmic reticulum of skinned slow fibres from *Xenopus* muscle. 1

SCHNETKAMP Paul P.M. Sodium–calcium exchange in the outer segments of bovine rod photoreceptors. 25

DOLPHIN A.C., FORDA S.R. & SCOTT R.H. Calcium-dependent currents in cultured rat dorsal root ganglion neurones are inhibited by an adenosine analogue. 47

DAVIES R.O. & KUBIN L. Projection of pulmonary rapidly adapting receptors to the medulla of the cat: an antidromic mapping study. 63

DUNÉR-ENGSTRÖM M., FREDHOLM B.B., LARSSON O., LUNDBERG J.M. & SARIA A. Autonomic mechanisms underlying capsaicin induced oral sensations and salivation in man. 87

BETZ W.J., CALDWELL J.H. & HARRIS G.L. Effect of denervation on a steady electric current generated at the end-plate region of rat skeletal muscle. 97

ITO Isao & MAENO Takashi Catechol: a potent and specific inhibitor of the fast potassium channel in frog primary afferent neurones. 115

SINE Steven M. & STEINBACH Joe Henry Activation of acetylcholine receptors on clonal mammalian BC3H–1 cells by low concentrations of agonist. 129

CHAPMAN R.A. Sodium/calcium exchange and intracellular calcium buffering in ferret myocardium: an ion-sensitive micro-electrode study. 163

BLAXTER T.J., CARLEN P.L., DAVIES M.F. & KUJTAN P.W. γ-Aminobutyric acid hyperpolarizes rat hippocampal pyramidal cells through a calcium-dependent potassium conductance. 181

STEPHENSON D.G. & WENDT I.R. Effects of procaine on calcium accumulation by the sarcoplasmic reticulum of mechanically disrupted rat cardiac muscle. 195

LAURUTIS V.P. & ROBINSON D.A. The vestibulo-ocular reflex during human saccadic eye movements. 209

CAVAGNA G.A. & FRANZETTI P. The determinants of the step frequency in walking in humans. 235

CURTIS M.J., QUASTEL D.M.J. & SAINT D.A. Lanthanum as a surrogate for calcium in transmitter release at mouse motor nerve terminals. 243

LUNG M.A. & WANG J.C.C. Effects of hypercapnia and hypoxia on nasal vasculature and airflow resistance in the anaesthetized dog. 261

HEGGELUND P. Quantitative studies of the discharge fields of single cells in cat striate cortex. 277

HEGGELUND P. Quantitative studies of enhancement and suppression zones in the receptive field of simple cells in cat striate cortex. 293

HAYDON D.A. & URBAN B.W. The actions of some general anaesthetics on the potassium current of the squid giant axon. 311

PEART W.S., RODDIS Shirley A. & UNWIN R.J. Renal electrolyte excretion and renin release during calcium and parathormone infusions in conscious rabbits. 329

MACLEAN Margaret R. & UNGAR A. Effects of the renin–angiotensin system on the reflex response of the adrenal medulla to hypotension in the dog. 343

FERRELL William R., NADE Sydney & NEWBOLD Peta J. The interrelation of neural discharge, intra-articular pressure, and joint angle in the knee of the dog. 353

BROADLEY Kenneth J., CHESS-WILLIAMS Russell G. & GRASSBY Paul F. A physiological basis for subclassifying β-adrenoceptors examined by chemical sympathectomy of guinea-pigs. 367

GALLACHER D.V. & MORRIS A.P. A patch-clamp study of potassium currents in resting and acetylcholine-stimulated mouse submandibular acinar cells. 379

MILES R. & WONG R.K.S. Excitatory synaptic interactions between CA3 neurones in the guinea-pig hippocampus. 397

APPELBERG B., JOHANSSON H. & SOJKA P. Fusimotor reflexes in triceps surae muscle elicited by stretch of muscles in the contralateral hind limb of the cat. 419

KANEKO Akimichi & TACHIBANA Masao Effects of γ-aminobutyric acid on isolated cone photoreceptors of the turtle retina. 443

KANEKO Akimichi & TACHIBANA Masao Blocking effects of cobalt and related ions on the γ-aminobutyric acid-induced current in turtle retinal cones. 463

MELZER W., SCHNEIDER M.F., SIMON B.J. & SZUCS G. Intramembrane charge movement and calcium release in frog skeletal muscle. 481

FINK R.H.A., STEPHENSON D.G. & WILLIAMS D.A. Calcium and strontium activation of single skinned muscle fibres of normal and dystrophic mice. 513

PROCEEDINGS OF THE PHYSIOLOGICAL SOCIETY

19–20 *December* 1985

Birmingham Meeting

DEMONSTRATIONS

Emmerson J.C.S. & Johns E.J. Collection and on-line analysis of renal function data using a BBC microcomputer. 2*P*

Banks D., Harris M.C., Jovanovíc P. & Stokes W.N. Use of a Video Assisted Scanning Table (VAST) in autoradiographic analysis. 3*P*

Dawson J.M., Hudlicka O. & Thanki C.M. The effect of flavonoid O-(beta-hydroxyethyl)-rutoside (Paroven®) on microcirculation in rat skeletal muscles with limited blood supply. 4*P*

Edwards R.J., Gooderson P.M.E. & White S. An easily adjustable upper body ergometry system. 5*P*

Bassey E.J., Dudley B.R. & Harries U.J. A new portable strain-gauged hand-grip dynamometer. 6*P*

Bassey E.J., Harries U.J. & Short A.H. Calibration of an isometric hand-grip dynamometer using a platform weighing machine. 7*P*

Ross H.F. & Westbury D.R. Physiology practical classes using the BBC microcomputer and ECONET. 8*P*

Banks D., Cottrell D.G., Daly G.A. & Harris M.C. A low-cost multichannel pressure application system suitable for the ejection of drugs through micropipettes. 9*P*

Rack P.M.H. & Ross H.F. Effects of imposed sinusoidal movements on the limbs of patients with Parkinson's disease. 9*P*

Comis S.D., Osborne M.P. & Pickles J.O. The problem of coating artefacts in high resolution scanning electron microscopy. 9*P*

COMMUNICATIONS

Hoppeler H., Hudlicka O., Price S. & Uhlmann E. Changes in the composition of muscle fibres and their ultrastructure in stimulated rat fast muscles with limited blood supply. 10*P*

Kucera Jan & Walro Jon M. How much is known about the motor nerve supply to mammalian muscle spindles? 11*P*

Cole J.D., Philip H.I., Rowe I. & Sedgwick E.M. The effect of variable gain visual feedback on the stability of finger positioning during an isometric hold test in normal man and patients without peripheral feedback. 12*P*

Elson R.C., Sillar K.T. & Skorupski P. Stretch reflexes from the thoracic-coxal muscle receptor organ entrain a central locomotor rhythm in the crayfish. 13*P*

Fisher Teresa, Vrbová Gerta & Wijetunge Anil Effects of partial denervation of rat soleus muscles on the size of its motor units. 14*P*

Hagbarth K.-E., Kunesch E.J., Nordin M., Schmidt R. & Wallin E.U. Gamma loop contributing to high motor unit firing rates in maximal voluntary contractions in man. 15*P*

Matthews P.B.C. & Pickup C.M. Observations on a late e.m.g. response to vibration in human flexor pollicis longus. 16*P*

Lakie M., Walsh E.G. & Wright G.W. Resonance at the human wrist in hemiplegia. 17*P*

Jordan D., Paton J.F.R. & Wood L.M. Hind limb vascular responses to combined stimulation of the nasal mucosa and superior laryngeal nerve in the anaesthetized cat. 18*P*

Peatfield A.C. & Richardson P.S. The effect of cigarette smoke on mucin secretion into the trachea of the anaesthetized cat. 19*P*

Cervero F., Lumb B.M. & Tattersall J.E.H. Supraspinal excitation and inhibition of viscero-somatic neurones in the thoracic spinal cord of the cat. 20*P*

Fry J.P. & Phelan P.P. Interactions of glycine receptor ligands in the normal mouse spinal cord. 21*P*

Angel A. & Kohn P. The effect of Librium (chlordiazepoxide hydrochloride) on the protoveratrine A-stimulated uptake of ^{22}Na by slices of rat cerebral cortex *in vitro*. 22*P*

Ashwood T.J. & Wheal H.V. D-2-amino 5-phosphonovalerate (D-APV) reduces epileptiform activity in slices of the kainic acid lesioned rat hippocampus. 23P

Jefferys J.G.R. Tetanus toxin chronic epileptic foci in rat hippocampal slices. 24P

Hilton S.M. & Redfern W.S. Neurotransmitters and the defence reaction: a preliminary study of the mid-brain periaqueductal grey matter in the rat. 25P

Salt T.E. Mediation of responses of rat ventrobasal thalamus neurones to sensory afferent stimulation by two or more excitatory amino acid receptors. 26P

Connold A.L., Evers J.V. & Vrbová G. Protease activity is involved in the elimination of polyneuronal innervation in the neonatal rat. 27P

Holm Julia A. & Logan S.D. Release of amino acids and a novel peptide from isolated fragments of rat cerebellar glomerulus. 28P

Ferry C.B. & Townsend H.E. Anticholinesterase-induced myopathy and changes in creatine kinase in mice. 29P

Johns Edward J. & Manitius Jacek A study of the α-adrenoceptors involved in the neural regulation of calcium excretion by the rat kidney. 30P

Bielkiewicz B., Cook D.A., Ramji K. & Yong M.-S. Reversible and irreversible H_1-receptor antagonists do not bind to the same site as histamine in guinea-pig ileum. 31P

El Haj A.J., Goldspink D.F. & Tosh D. Streptozotocin-induced diabetes in Sprague–Dawley rats during pregnancy. 32P

Bennett T., Bloom S.R., Clark A.G., Evans D.F., Fellows I.W. & Macdonald I.A. The effect of insulin-induced hypoglycaemia on gastrointestinal motility in man. 33P

Mitchell M.A. & Raza A. A comparison of the effects of 24 hours fasting and iopanoic acid on the responses in plasma thyroid hormones to T.R.H. in the domestic fowl. 34P

Egginton S. Effects of an anabolic hormone on performance and composition of rat skeletal muscle. 35P

Noble A.R. & Parker Jane C. A role for prostaglandins in converting enzyme inhibitor-induced active and inactive renin secretion. Studies using enalapril and indomethacin in conscious sheep. 36P

Emmerson J.C.S. & Johns E.J. Intrarenal generation of angiotensin II during an acute reduction in renal perfusion pressure below the autoregulatory range in the rat. 37P

Gammage M.D., Logan S.D. & Littler W.A. Temporal changes in myocardial and serum calcium with thyroid dysfunction in the rat. 38P

Morrison J.D. & Reilly J. Decision-making criteria for spatial vision in young and old observers. 39P

McCaig R.H. Some physiological effects of a sojourn in a tropical climate. 40P

Butler P.J. & Woakes A.J. The effect of exercise on heart rate in man during breath-hold submersion. 41P

Bassey E.J. & Terry A.M. The oxygen cost of walking in the elderly. 42P

Bradwell A.R., Coote J.H., Nicholson A.N., Smith P.A. & Stone Barbara M. Altitude insomnia in man. 43P

Rennie M.J., von Eichstorff P.D.G. & Wilson S.L. Effects of exercise on zinc excretion in man. 44P

Greenhaff P.K. & Maughan R.J. Effects of dietary manipulation on acid-base status and the performance of maximal exercise in man. 45P

Innes A.J. & Taylor E.W. A functional analysis of pulmonary, cutaneous and branchial gas exchange in the Trinidad mountain crab: a comparison with other land crabs. 46P

McVicar A.J. Renal haemodynamic actions of arginine-vasopressin in the rat. 47P

McGeown J.G., McHale N.G., Roddie I.C. & Thornbury K.D. Lymph flow changes in the sheep hindlimb following the application of a venous occlusion cuff. 48P

Davies M.K., Littler W.A., Murray R.G. & Tan L.B. The contribution of cardiac contractile frequency to cardiac pumping performance during right ventricular pacing in man. 49P

Zbrożyna A.W. Vasodilatation in forearm and calf during sleep in human subjects. 50P

Banks D., Harris M.C. & Stokes W.N. Unilateral changes in cerebral blood flow following single-sided carotid body chemoreceptor stimulation in rats. 51P

Hicks M.N., Knapp M.F., Linden R.J. & Mary D.A.S.G. Absence of a natriuretic response to left atrial distension in the dog after vagal cooling: evidence against a natriuretic hormonal role for atrial natriuretic peptides? 52P

Hicks M.N., Linden R.J., Mary D.A.S.G. & Walters G.E. The role of the reflex increase in heart rate in the reflex natriuresis and diuresis to stimulation of atrial receptors in dogs with different blood volumes. 53P

Littler W.A., Salih M.M., Smith S.A. & Stallard T.J. Measurement of baroreceptor-heart rate reflex sensitivity and latency in man: a comparison of two different methods. 54*P*

El-Khelly F. & Hudlicka O. The role of inorganic phosphate in vascular dilatation. 55*P*

Hebert M.T. & Marshall Janice M. Responses of skeletal muscle microcirculation to circulating noradrenaline in the rat. 56*P*

Bradley D.J., Ghelarducci B., Paton J.F.R. & Spyer K.M. Cardiovascular responses to stimulation of the posterior cerebellum in the decerebrate rabbit. 57*P*

Mifflin S.W., Spyer K.M. & Withington-Wray D.J. Hypothalamic inhibition of baroreceptor inputs in the nucleus of the tractus solitarius of the cat. 58*P*

Gee H. & Taylor E.W. Changes in human fetal heart rate with fetal breathing movements as an indicator of fetal condition. 59*P*

Barnas G.M., Gleeson M. & Rautenberg W. The effect of hypoxia on thermoregulatory responses evoked by external and central cooling in the pigeon. 60*P*

Howl J.D. & Publicover S.J. Induction of ultrastructural damage in mammalian cardiac and skeletal muscle by Bay K 8644. 61*P*

Burnstock G., MacKenzie I. & Manzini S. Regulation of voltage-dependent calcium channels in the guinea-pig vas deferens by the dihydropyridines nifedipine and Bay K 8644. 62*P*

Spruce A.E., Standen N.B. & Stanfield P.R. The effect of nucleotides on the adenosine triphosphate-regulated potassium channel in frog skeletal muscle. 63*P*

Murphy Richard L.W. & Smith Margaret E. Effect of phorbol ester and diacylglycerol on the endplate responses of the mouse diaphragm. 64*P*

Hellmann S., Stinnakre J. & Thieffrey M. Enhancement of miniature endplate potential frequency at the frog neuromuscular junction by the photoreactive imidazole-2-diazonium cation. 65*P*

Van der Kloot W. AH5183 Blocks increases in quantal size at the frog neuromuscular junction. 66*P*

Hundal H.S., Rennie M.J. & Watt P.W. Sodium dependent glutamine transport in perfused rat skeletal muscle. 67*P*

Bennett T. & Gardiner S.M. Factors influencing the maintenance of B.P. in rats treated neonatally with guanethidine. 68*P*

POSTER COMMUNICATIONS

Mina M. & Morrissey Shelagh The effect of cystic fibrosis (CF) serum and pancreotone on the transport and retention of sulphate across isolated gastrointestinal mucosae of the rat. 69*P*

Hreash F., Laycock J.F. & Walter S.J. Cardiovascular response to haemorrhage in anaesthetized Brattleboro rats infused with vasopressin. 70*P*

Boyd C.A.R., Shennan D.B. & Webb K.L. Divalent anion inhibition of sulphate transport into membrane vesicles from human placenta. 71*P*

Fleetwood-Walker S.M., Hope P.J., Mitchell R. & Molony V. Effects of receptor-selective opioid peptides in superficial dorsal horn of the cat. 72*P*

Atherton J.C., Bobinski H. & Solomon L. Effect of posture on plasma atrial natriuretic peptide (ANP) and renal function in man. 73*P*

Anderson R.A. & Mitchell R. $GABA_A$ binding sites and glutamic acid decarboxylase activity in the neurointermediate lobe of Brattleboro rats. 74*P*

Mitchell R. & Ogier S.-A. Investigation of the mechanism of somatostatin action on growth hormone secretion in rats. 75*P*

Harrison F.G. & Rawlinson S.R. The effects of dantrolene sodium on reflex activity in the decerebrate cat. 76*P*

Marshall Janice & Metcalfe J.D. Cardiovascular changes associated with augmented breaths during normoxia and hypoxia in the rat. 77*P*

Egginton S. & Sidell B.D. Changes in mitochondrial spacing in fish skeletal muscle induced by environmental temperature. 78*P*

Shirley D.G. & Skinner J. Renal function in rats with chronic sodium depletion. 79*P*

Lawson Dorothy, Leslie G.C. & Part N.J. An assessment of the use of the Wartenburg pendulum test in an elderly population. 80*P*

Wray Susan A ^{31}-phosphorus nuclear magnetic resonance study of the regulation of intracellular pH following changes in extracellular pH in rat uterine smooth muscle. 81*P*

Paul D.H. & Roberts B.L. Connexions of reticulo-spinal neurones with the cerebellum in the eel. 82*P*

Robinson P.P. A peripheral stimulus initiates the collateral reinnervation of cat teeth. 83*P*

El Haj A.J., Innes A.J. & Taylor E.W. The pulmonary, cutaneous and branchial gas exchange organs of the Trinidad mountain crab. 84*P*

Hilton S.M. & Yardley C.P. Blood pressure and heart-rate responses to long-term stimulation of the hypothalamic defence area in the rat. 85*P*

Semba Charles & Williams Alan J. Chloride channels in highly purified human platelet surface membranes. 86*P*

Lovick A.H.J., Pickard J.D. & Richards H.K. A modification of the method for the measurement of cerebral blood flow using [^{14}C]iodoantipyrine in the rat. 87*P*

Kirby M.S. & Poole-Wilson P.A. Importance of calcium and hyaluronidase concentrations in the preparation of isolated calcium tolerant myocytes from adult rat and rabbit hearts. 88*P*

Aitken J.C., Miller R.W.S. & Thompson J. Functional capacity in the elderly. 89*P*

Leiper J.B. & Maughan R.J. Absorption of water and electrolytes from hypotonic, isotonic and hypertonic solutions. 90*P*

Clarke R.W. & Ford T.W. The effects of the opioid antagonists ICI 174864 and WIN 44441-3 on a spinal reflex in the rabbit. 91*P*

Redfern W.S. & Yardley C.P. Effects of lesions of the mid-brain periaqueductal grey matter on the development of hypertension in spontaneously hypertensive rats. 92*P*